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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/577,007	05/24/2000	Kazuyoshi Fujioka	829-551	5218

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EXAMINER

SCHECHTER, ANDREW M

ART UNIT PAPER NUMBER

2871

DATE MAILED: 05/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/577,007

Applicant(s)

FUJIOKA ET AL.

Examiner

Andrew Schechter

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 7 March 2002 have been fully considered but they are not persuasive.

Claim 1 has been amended to overcome the previous rejections, by adding the limitation "so as to surround the display pixel area on all sides". The *Kikuchi* and *Mitsui* references relied upon for the previous rejections fail to show this feature, so the examiner indicated during the interview of 5 February 2002 that "this would probably be allowed based on current references". Unfortunately, one of the documents made of record by the applicant, Japanese Patent Document 4-295824, shows this feature. Therefore, while the previous rejections have been withdrawn, new rejections in view of this reference are made below.

Claim 10 recites the electrode pattern extending along the side of the display area between the heads of the first and second (rubbing direction) arrows. The applicant argues that *Kikuchi* fails to disclose or suggest this. This is not persuasive, as *Kikuchi* shows the electrode pattern on one side of the display area, and it is possible to determine from the reference that this is the same side recited by claim 10. First, the examiner notes that the applicant does not assert that the electrode pattern in *Kikuchi* is on a *different* side, but merely asserts that the side is not indicated. Second, the applicant argues that Fig. 9 of *Kikuchi* is prior art; while this may be true, it is prior art upon which the improvement (electrode patterns to adsorb ionic impurities) is added, so

it is entirely reasonable to consider the device of *Kikuchi* possessing the basic LCD features shown in the "prior art" of Fig. 9. Third, Fig. 1 of *Kikuchi* shows that the electrode pattern is on the same side as the liquid crystal enclosure opening [10] which is shown in Fig. 9 to be on the same side as that defined by the heads of the (rubbing direction) arrows defined in claim 10. The previous rejection of claim 10 is therefore repeated below.

The examiner misinterpreted claims 12 and 13, leading him to state that they were allowable in the previous office action. These claims recite the electrode pattern being on either 2 or 3 particular sides of the display; the examiner erroneously interpreted this to mean that they are only on those sides, as is the case in claims 9 and 10. Since this is not the case, these claims are rejected as discussed below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Mitsui et al.*, U.S. Patent No. 5,408,345 in view of *Kikuchi et al.*, Japanese Patent Document 5-323336.

Mitsui discloses [see Figs. 4-6, for example] a liquid crystal display device comprising a pair of substrates [31, 45], a liquid crystal layer [49], switching elements

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[40], gate and source lines [32, 39], interlayer film [42], and pixels [38] over the gate/source lines. Further, it discloses that the pixels overlap the gate or signal lines, that the pixel electrodes are reflective, and that the interlayer film is organic. *Mitsui* does not disclose an electrode pattern for adsorbing an ionic impurity on the interlayer insulating film in the surrounding region.

However, it would have been obvious for one of ordinary skill in the art to provide such an electrode pattern, as taught by *Kikuchi*. *Kikuchi* teaches and motivates [see abstract and Figs. 1, 2, 9 for example] forming an electrode pattern in the surrounding (non-display) region, which when supplied with a voltage acts to trap ionic impurities; this accomplishes the desirable goal of preventing an uneven display. The electrode is inward of the sealing material, covered with an alignment film, gets a DC potential (inherently from a power supply on either the gate or source driving circuits, as these are the only electrical connections to the substrate electrodes), and the electrode pattern is only on one side of the display area, on the side described by claim 10 [see discussion above]. Further, motivated to save manufacturing steps, it would be obvious to make the electrode pattern and the pixel electrodes simultaneously, in which case the electrode pattern would also be reflective. Claim 10 is therefore unpatentable.

4. Claims 1-8 and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Mitsui* in view of *Kikuchi* as applied to claim 10 above, and further in view of *Tanaka*, Japanese Patent Document 4-295824.

The device of *Mitsui* in view of *Kikuchi* as applied to claim 10 above has the electrode pattern along only one side of the display, not "so as to surround the display

pixel area on all sides" as recited in claims 1 and 15. This feature is shown in *Tanaka*, however, and it would be obvious to one of ordinary skill in the art to incorporate it into the device of *Mitsui* in view of *Kikuchi*, motivated by the improvement in image quality shown by having the dummy electrode pattern of *Tanaka* [compare Figs. 3 and 4 of *Tanaka*]. The features of the dependent claims 2-7, 11, and 14 are present in the device of *Mitsui* in view of *Kikuchi* as discussed above. Claims 1-7, 11, 14, and 15 are therefore unpatentable.

Claim 8 recites the additional feature that the electrode pattern is in segments, individually addressed, which is satisfied by the dummy electrode pattern of *Tanaka*. Claim 8 is therefore unpatentable.

Claims 12 and 13 recite the electrode patterns being on particular sides, but not exclusively, so they are also satisfied by the electrode pattern of *Tanaka* (as discussed above). Claims 12 and 13 are therefore unpatentable.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Kikuchi* in view of *Mitsui*.

Kikuchi discloses a liquid crystal display device comprising a pair of substrates [1, 2], liquid crystal [14], TFTs with inherent gate lines, source lines, and pixel electrodes [see paragraph 24], and an electrode pattern for adsorbing an ionic impurity in the surrounding region of a display pixel area. *Kikuchi* does not explicitly disclose that the pixel electrodes are provided over the gate/source lines via an interlayer film which also underlies the electrode pattern.

However, it would have been obvious to one of ordinary skill in the art to provide the pixel electrodes in this manner, as disclosed in *Mitsui*, for reasons including providing a large aperture ratio, being able to form asperities in the organic layer easily, etc. Again, making the pixel electrodes and electrode pattern simultaneously would be obvious to save manufacturing steps, among other reasons. Claim 10 is therefore unpatentable.

Allowable Subject Matter

6. Claim 9 is allowed.

7. The following is an examiner's statement of reasons for allowance:

Claim 9 recites the electrode pattern for adsorbing an ionic impurity being only along three particular sides of the display, which is not disclosed by the prior art (*Tanaka* discloses the electrode pattern on all four sides, *Kikuchi* discloses it only on one side, that recited by the present claim 10). Claim 9 is therefore allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (703) 306-5801. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Sikes can be reached on (703) 308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

AS

Andrew Schechter
May 6, 2002


TOANTON
PRIMARY EXAMINER